

CLAIMS

1. An olefin copolymer comprising [A] a cyclic olefin, [B] an aromatic vinyl compound and [C] an aliphatic α -olefin having from 2 to 20 carbon atoms, which is characterized in that (1) the component [A] accounts for from 0.1 to 30 mol%, the component [B] accounts for from 0.1 to 49.9 mol%, and the total of the components [A] and [B] accounts for from 0.2 to 50 mol%, and (2) the copolymer has a glass transition temperature T_g of lower than 60°C.

2. The olefin copolymer as claimed in claim 1, wherein the component [A] accounts for from 0.1 to 10 mol%, the component [B] accounts for from 0.1 to 45 mol%, and the total of the components [A] and [B] accounts for from 0.2 to 50 mol%.

3. The olefin copolymer as claimed in claim 1 or 2, of which the glass transition temperature T_g is lower than 30°C.

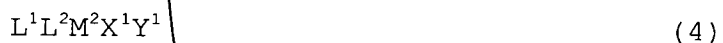
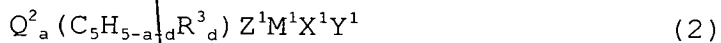
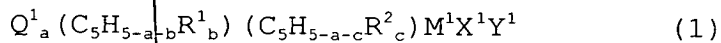
4. The olefin copolymer as claimed in any of claims 1 to 3, of which the limiting viscosity $[\eta]$ measured in decalin at 135°C falls between 0.01 and 20 dl/g.

5. The olefin copolymer as claimed in any of claims 1 to 4, of which the tensile modulus is at most 600 MPa.

6. The olefin copolymer as claimed in any of claims 1 to 5, of which the internal haze is at most 20 %.

7. The olefin copolymer as claimed in any of claims 1 to 6, which is obtained by polymerizing a cyclic olefin, an aromatic vinyl compound and an aliphatic α -olefin having from

2 to 20 carbon atoms in the presence of an olefin polymerization catalyst that comprises (D) at least one selected from transition metal compounds of Groups 4 to 6 of the Periodic Table and transition metal compounds of Groups 8 to 10 of the Periodic Table of the following general formulae (1) to (4), and (E) at least one selected from a compound group of (e-1) oxygen-containing organometallic compounds, (e-2) ionic compounds capable of reacting with the transition metal compounds to form ionic complexes, and (e-3) clay, clay minerals and ion-exchanging layered compounds:



wherein Q^1 represents a bonding group that crosslinks the two conjugated five-membered cyclic ligands $(C_5H_{5-a-b}R^1_b)$ and $(C_5H_{5-a-c}R^2_c)$; Q^2 represents a bonding group that crosslinks the conjugated five-membered cyclic ligand $(C_5H_{5-a-d}R^3_d)$ and the group Z^1 ; R^1 , R^2 , R^3 and R^4 each represent a hydrocarbon group, a halogen atom, an alkoxy group, a silicon-containing hydrocarbon group, a phosphorus-containing hydrocarbon group, a nitrogen-containing hydrocarbon group, or a boron-containing hydrocarbon group; and a plurality of these groups, if any, may be the same or different, and may be bonded to each other to form a cyclic structure; a represents 0, 1 or 2; b, c and d each

represent an integer of from 0 to 5 when $a = 0$, or an integer of from 0 to 4 when $a = 1$, or an integer of from 0 to 3 when $a = 2$; e is an integer of from 0 to 5; M^1 represents a transition metal of Groups 4 to 6 or Groups 8 to 10 of the Periodic Table; M^2 represents a transition metal of Groups 8 to 10 of the Periodic Table; L^1 and L^2 each represent a covalent-bonding or coordination-bonding ligand, and they may be bonded to each other; X^1 , Y^1 , Z^1 and W^1 each represent a covalent-bonding or ionic-bonding ligand, and X^1 , Y^1 and W^1 may be bonded to each other.

8. Films and sheets formed from the olefin copolymer of any of claims 1 to 7.

add A 2 y Add B4